

IN THE CLAIMS

Upon entry of the present amendment, the status of the claims will be as is shown below. The present listing of claims replaces all prior versions and listings of claims in the present application.

Claims 1-34. (Canceled).

35. (New) A system for controlling data traffic generated by at least one multimedia object stream source, the system comprising:

an ingress gateway that controls transmission of data packets of a multimedia object stream into a network;

an egress gateway that controls the receipt of data packets of a multimedia object stream from the network; and

a content traffic exchange hop connected to a routing node of a network, the routing node comprising one of a legacy switching component and a routing network component, said content traffic exchange hop monitoring the load of the routing node, and said content traffic exchange hop scheduling transmission of data packets of a multimedia object from the routing node, based upon the monitoring and based upon timing requirements for the data packets, to facilitate delivery of real-time object streams across the network to end-users.

36. (New) The system as claimed in claim 35, the ingress gateway comprising:

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an object fragmentor that fragments and packetizes an object into data packets of a suitable payload size for a network delivery medium;

a timer that determines the decoding time needed for an end device to decode the object;

an object marker that links payloads of an object;

a time slot divider that computes the transmission time of the object; and

a time slot allocator that determines the time of delivery for the object.

37. (New) The system as claimed in claim 35, the content traffic exchange hop and egress gateway comprising at least one of:

a network parameter mapper and decoder module that decodes headers of packetized multimedia objects, each header including a precedence level, a time stamp of the multimedia object and a source and destination reference;

a network payload packetizer and depacketizer that packetizes data packets of an object transmitted to a network layer and that depacketizes data packets of an object received from a network layer;

an object stream scheduler that registers a decoding time for each object received by the node and that schedules a delivery time of each object to be routed from the node;

a data packet transmission scheduler that schedules the transmission of a multimedia object when transmission time allows the multimedia object to be transmitted completely;

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a time slot re-scheduler that re-allocates the time scheduled for sending an object when the object fails to meet real time requirements;

a time slot divider that synchronizes object streams for at least one of re-transmission and re-routing; and

a time slot allocator that allocates a delivery time for objects transmitted from the node.

38. (New) The system as claimed in claim 35, further comprising a clock that synchronizes received object streams and schedules transmission times for object streams to be transmitted.

39. (New) The system as claimed in claim 38, the clock comprising:

an object arrival determiner that determines an arrival of the first data packet belonging to an object based on a multimedia object reference;

a tracker that computes and maintains a time table of streams based on a difference between a transmission of the last object sent and the next scheduled object transmission;

a list creator that creates a list linking data packets of an object that are received; and

a queue assigner that assigns time slots for data packets.

40. (New) The system as claimed in claim 35, further comprising a delayer that uses cache memory to delay transmission of data objects, to meet real-time decoding requirements

at an end receiver, to avoid network congestion and to limit short-term bandwidth utilization peaks.

41. (New) The system as claimed in claim 40, further comprising a synchronizer that synchronizes object streams.

42. (New) The system as claimed in any one of claims 35, further comprising a moderator that moderates peak data by diverting object data of lower precedence to a cache memory.

43. (New) The system as claimed in claim 35, further comprising a bandwidth allocator that divides decoding frames of a real-time delivery window into multiple time slots, to allocate bandwidth and conform to a traffic filter specification.

44. (New) A system for controlling data traffic generated by at least one multimedia object stream source, the system comprising:

a content traffic exchange hop connected to a routing node of a network, the routing node comprising one of a legacy switching component and a routing network component, said content traffic exchange hop monitoring the load of the routing node, and said content traffic exchange hop scheduling transmission of data packets of a multimedia object from the routing node, based upon the monitoring and based upon timing requirements for the data packets, to facilitate delivery of real-time object streams across the network to end-users.